

Propiedades psicométricas del cuestionario de expectativas hacia el consumo de alcohol (AEQ-A) en estudiantes de psicología de Mar del Plata, Argentina

Raquel Inés Peltzer^{*1}, Aldana Lichtenberger^{1,2}, Karina Conde^{1,2}, Mariana Cremonte

¹ Universidad Nacional de Mar del Plata (UNMdP)

² Consejo Nacional de Investigación Científicas y Técnicas (CONICET)

Recibido, mayo 22/2015

Concepto de evaluación, diciembre 14/2015

Aceptado, julio 11/2016

Referencia: Peltzer, R. I., Lichtenberger, A., Conde, K. & Cremonte, M. (2017). Propiedades psicométricas del Cuestionario de Expectativas hacia el consumo de alcohol (AEQ-A) en estudiantes de psicología de Mar del Plata, Argentina). *Acta Colombiana de Psicología*, 20(1), 22-31. DOI: 10.14718/ACP.2017.20.1.2

Resumen

El objetivo del presente trabajo fue analizar las propiedades psicométricas (estructura factorial, consistencia interna y validez concurrente) de una versión adaptada del Alcohol Expectancy Questionnaire Adolescents (AEQ-A) en estudiantes universitarios de la ciudad de Mar del Plata, Argentina. Las expectativas hacia los efectos del alcohol se refieren a las creencias que las personas tienen sobre los efectos que produce el consumo de alcohol en el comportamiento, y han sido relacionadas con el inicio, el mantenimiento y los patrones de consumo. Si bien se han desarrollado varios instrumentos para su medición, el AEQ-A ha sido uno de los más utilizados; sin embargo debido a la variabilidad cultural de las expectativas, es recomendable realizar adaptaciones del mismo a los contextos particulares en estudio. Para este trabajo se utilizó una versión del AEQ-A previamente validada en Mar del Plata, Argentina, que consta de 40 ítems medidos en una escala dicotómica (verdadero/falso). La muestra estuvo compuesta por 1076 estudiantes de Psicología de la Universidad Nacional de Mar del Plata. Se realizaron análisis factoriales exploratorios y confirmatorios, en los cuales se encontró una estructura de seis factores que reunieron 37 ítems. La consistencia interna de cada subescala fue adecuada y la validez concurrente fue satisfactoria ya que los puntajes en las subescalas de creencias sobre los efectos positivos del consumo en situaciones sociales se relacionaron con el consumo excesivo episódico. Se concluyó que contar con instrumentos de evaluación de las expectativas permitirá estudiar los factores psicosociales asociados al consumo y brindar información útil para el diseño de intervenciones.

Palabras clave: expectativas, AEQ-A, universitarios, alcohol.

Psychometric Properties of the Alcohol Expectancy Questionnaire (AEQ-A) in psychology students from Mar del Plata, Argentina

Abstract

The aim of this article was to analyze the psychometric properties of an adapted version of the Alcohol Expectancy Questionnaire Adolescent (AEQ-A) in university students from Mar del Plata city, Argentina. Expectancies about the effects of alcohol refer to the beliefs that people hold about the consequences of alcohol consumption on behavior. Expectancies have been related to drinking initiation and maintenance, and to habitual drinking patterns. Although several questionnaires have been developed to measure expectancies, the AEQ-A has been one of the most frequently used. Studies in different cultural that, given expectancies' cultural variability, the questionnaire must be adapted to each particular context. A version of the AEQ-A previously validated in Mar del Plata, Argentina, was used, consisting of 40 items measured on a (true / false) dichotomous scale. The sample consisted of 1076 psychology students from the National University of Mar del Plata, Argentina. Exploratory and confirmatory factor analyzes were performed. The factorial analysis resulted in six factors containing 37 items. Internal consistency of each subscale was adequate. Concurrent validity was satisfactory inasmuch as scores on the subscales

* Raquel Inés Peltzer, Jacinto Peralta Ramos 1640, Mar del Plata, Buenos Aires, Argentina. Tel: +54 (223) 4630616. ripeltzer@gmail.com
El presente trabajo de investigación fue realizado con el apoyo de una Beca "Ramón Carrillo-Arturo Oñativia", categoría iniciación, otorgada por el Ministerio de Salud de la Nación, Argentina, a través de la Comisión Nacional Salud Investiga.

about beliefs associated with positive effects of consumption in social situations relate to heavy episodic drinking. Instruments like this one to evaluate expectancies, will allow the study of psychosocial factors associated with consumption and provide useful information to develop prevention strategies.

Key words: expectancies, AEQ-A, university students, alcohol.

Propriedades psicométricas do Questionário de Expectativas para o Consumo de Alcool (AEQ-A) em Estudantes de Psicologia de Mar del Plata, Argentina

Resumo

O objetivo do presente trabalho foi analisar as propriedades psicométricas (estrutura fatorial, consistência interna e validade concorrente) de uma versão adaptada do Alcohol Expectancy Questionnaire Adolescents (AEQ-A) em estudantes universitários da cidade de Mar del Plata, Argentina. As expectativas para os efeitos do álcool referem-se às crenças que as pessoas têm sobre os efeitos que produz o consumo de álcool no comportamento, e têm sido relacionadas com o início, a manutenção e os padrões de consumo. Embora tenham sido desenvolvidos vários instrumentos para sua medida, o AEQ-A tem sido um dos mais utilizados; no entanto devido à variabilidade cultural das expectativas, é recomendável realizar adaptações deste aos contextos particulares em estudo. Para este trabalho, utilizou-se uma versão do AEQ-A previamente validada em Mar del Plata, Argentina, que consta de 40 itens medidos numa escala dicotômica (verdadeiro/falso). A amostra esteve composta por 1076 estudantes de Psicologia da Universidad Nacional de Mar del Plata. Realizaram-se análises fatoriais exploratórias e confirmatórias, nas quais se encontrou uma estrutura de seis fatores que reuniram 37 itens. A consistência interna de cada subescala foi adequada e a validade concorrente foi satisfatória já que as pontuações nas subescalas de crenças sobre os efeitos positivos do consumo em situações sociais relacionaram-se com o consumo excessivo episódico. Concluiu-se que contar com instrumentos de avaliação das expectativas permitirá estudar os fatores psicossociais associados ao consumo e dar informação útil para a elaboração de intervenções.

Palavras-chave: expectativas, AEQ-A, universitários, álcool.

INTRODUCTION

On a worldwide scale, alcohol consumption of university students represents a growing concern for Public Health, a fact that doesn't leave out Latin-American countries (World Health Organization [WHO], 2010). University students present a high prevalence of heavy episodic drinking, a kind of consumption that involves the intake of five or more drinks (one drink represents a beverage containing approximately 11 gr. of pure alcohol) in one occasion. This exposes them to immediate health consequences (traffic injuries, violence and increased criminality, unprotected sex, etc.), as well as to long term consequences, such as alcohol dependence (Karam, Kypri, & Salamoun, 2007; White & Hingson, 2014). In Argentina, a study developed by the Drugs National Observatory (Observatorio Nacional de Drogas, 2006) found that 86% of university students referred having consumed alcohol at least once, and that 25% had at least one episode of heavy drinking in the last year. Recent studies show that heavy episodic drinking extends to 35% of the university students in Mar del Plata city (Conde, Remaggi, & Cremona, 2014). While an epidemiologic view allows us to determine this problem's

magnitude, to design an effective intervention strategy it is important to know which other factors associate with alcohol consumption and if a change in those factors could be achieved in order to reduce it.

In recent years, the study of cognitive models to explain alcohol consumption has grown. One of these models is the Expectancy Theory, which understands that expectancies are individual beliefs related to behavior. People act according to what they believe that is going to happen as a result of performing a certain behavior or not.

People hold beliefs about the consequences of alcohol consumption, and when they expect positive consequences as a result of such consumption (positive expectancies), their motivation to consume will grow. On the contrary, people that consider the negative consequences of alcohol intake (negative expectancies) will be less motivated to consume (Jones, Corbin & Fromme, 2001).

The study of the expectancies towards alcohol consumption effects has proven to be useful in order to approach the psychosocial factors associated with consumption (Kouimtsidis, Stahl, West, & Drummond, 2014). Moreover, these expectancies are related to the age of onset of alcohol use (Leigh, 1989; Leigh & Stacy, 2004) and to different

drinking patterns, such as the heavy episodic drinking (Fisher, Miles, Austin, Camargo Jr, & Colditz, 2007) and associated problems (Blume & Blume, 2013).

Among the developed instruments to empirically evaluate alcohol expectancies, the Alcohol Expectancy Questionnaire (AEQ) (Leigh, 1989) has been the most widely used. Even though earlier versions of this instrument focused just on the positive expectancies (Brown, Goldman, Inn, & Anderson, 1980), later adaptations such as the AEQ-A (Brown, Christiansen, & Goldman, 1987) include the evaluation of negative expectancies and were built upon transcriptions of phrases acquired in interviews to teenagers from 12 to 19 years old and item modifications of the AEQ, specifically constructed for young population.

The original version of the AEQ-A contains seven subscales: *global positive transformations, enhanced or impeded social behavior, improved cognitive and motor abilities, enhanced sexuality, deteriorated cognitive and behavioral function, increased arousal and relaxation or tension reduction* (Aas, 1993; Christiansen, Goldman, & Inn, 1982). Studies developed in different contexts have shown a diverse distribution of the subscales in comparison with the original questionnaire, varying in items quantity and structure (Aas, 1993; Christiansen et al., 1982; Herrán & Ardila, 2009; Kline, 1996; Miller, Smith, & Goldman, 1990; Perez-Aranibar, Van den Broucke, & Fontaine, 2005).

Considering expectancies' cultural variability, it is possible to find differences in their structure in dissimilar contexts (Galvez, 2009; Pérez-Aranibar et al., 2005). This fact justifies the need to replicate analyses, with the purpose of adapting instruments to each drinking context and identifying similarities with previous findings. To date, in Argentina only one AEQ-A validation process has been done, (Pilatti, Godoy, & Brussino, 2010) with a children and adolescents sample whose consumption practices are different to those of university students, usually exposed to higher risks.

Taking into account all of the above, the aim of this study is to analyze the psychometric properties (dimensionality, reliability and concurrent validity) of a previously adapted version of the AEQ-A in psychology students. Expectancies evaluation instruments such as this will allow the study of consumption related aspects.

METHOD

Participants

A systematic sample was gathered, consisting of 1076 psychology students from the National University of Mar

del Plata city. This sample surpasses the recommended criteria to establish the factorial validity of a five subjects for item questionnaire (Norman, Streiner, & Tarrés, 1996).

The sample consisted of 83% females [CI 95% 79-86] and 17% males [CI 95% 14-21], with a mean age of 24.83 years [CI 95% 24.07-25.58] and an average typical consumption of 3.5 drinks for occasion [CI 95% 2.92-4.09].

Instruments

The version of the AEQ-A questionnaire used in this study was previously translated and linguistically adapted to Mar del Plata city's particular context (Lichtenberger, Marconato, & Cremonte, 2011). It consists of a self-report involving 40 items measured on a dichotomous scale (true/false) that evaluates positive and negative expectancies in seven subscales (global positive transformations, enhanced or impeded social behavior, improved cognitive and motor abilities, enhanced sexuality, deteriorated cognitive and behavioral function, increased arousal and relaxation or tension reduction). In order to calculate the final score of each subscale, the scores of the items involved in each subscale must be added (true=1, false=0). Higher scores indicate higher expectancies about alcohol effects.

The instrument included sociodemographic data and an evaluation of heavy episodic drinking in the last month. This evaluation was conducted through one question about the consumption of five standard units on one occasion in the last month. To calculate standard units an indicative chart containing the quantity of standard units according to different beverage types was included in the questionnaire.

Procedure

Data were collected during lecture hours in the classrooms. If students were absent when the questionnaire was administered, collectors came back the following week. Participation was voluntary, no compensation was offered and there were only five refusals. At least two researchers were present when the questionnaire was applied in order to clear up doubts and resolve the issues that could arise. Once the questionnaire was completed, each participant was given a brochure containing information about assistance centers for alcohol related problems, as well as the research team contact information. This study was approved by the Ethics Committee of the Epidemiology National Institute Dr. J. H. Jara of Mar del Plata city.

The whole sample was randomly divided into two parts. In the first part, the structure (dimensionality) of the questionnaire was determined by an exploratory factor analysis. Because it is an instrument with dichotomous items, analyses were adjusted to a tetrachoric correlations matrix. The

extraction was done by the maximum verisimilitude method with a normalized promax rotation, given the high level of correlation between dimensions. Additionally, a parallel analysis was conducted for $n = 100$ simulated samples.

The Subscales' internal consistency was evaluated through Kuder Richardson -20 coefficient (KR-20) and its confidence intervals were estimated at 95%; analyses to an item level were also conducted (factorial load and corrected point-biserial correlation). The degree of relation among the different dimensions was estimated through Spearman correlation coefficient (bilateral) for non-parametric data.

Later on, in the second part of the sample, a confirmatory factor analysis was performed on the found dimensions, using X^2 , Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Root Mean Square Error of Approximation ($RMSEA$), and Standardized Root Mean Square Residual ($SRMR$) as fit indices. The $WLSMV$ robust estimator was used, indicated for non-parametric data (Brown, 2006). In addition to the six theoretical subscales, a second-order confirmatory factor analysis with two factors (positive and negative expectancies) was conducted.

In order to establish the questionnaire's concurrent validity, a prediction analysis of heavy episodic drinking was performed, considering each one of the expectancy subscales (adding each component item, true = 1, false = 0). With this purpose, different logistic regressions were performed. In each logistic regression, heavy episodic drinking (reference category = positive) was the outcome measure and the score in each one of the six expectancy subscales was the predictor variable.

Data processing and analysis was conducted with psych package, `fa.parallel.poly` y `fa.poly` functions (Revelle, 2012) and `lavaan`, `cfa` function (Rosseel, 2012) of R 3.2.3 software, `ICalfa` (Merino, 2015), and SPSS 17.0.

RESULTS

In this section, exploratory factor analysis results are presented, followed by the confirmatory factor analysis of the found dimensions. Finally, the concurrent validity of the questionnaire (heavy episodic drinking prediction) is presented.

Factorial structure

Data showed suitable properties for factor analysis ($KMO = .86$, Bartlett's sphericity test = 539.9, DoF= 78, $p < .001$). The solution was adjusted to six factors which had higher eigenvalues than those found in the simulated samples (Figure 1), and then explained 61% of the variance.

Only those items with a factorial load higher than .40 were kept. Items with shared factorial loads (two) were excluded.

The final scale was composed by 37 of the 40 original items, distributed in six subscales. Five of them refer to expectancies towards positive effects on the behavior and one of them refers to the negative effects of alcohol consumption (see Table 1). The five positive subscales can be described as follows:

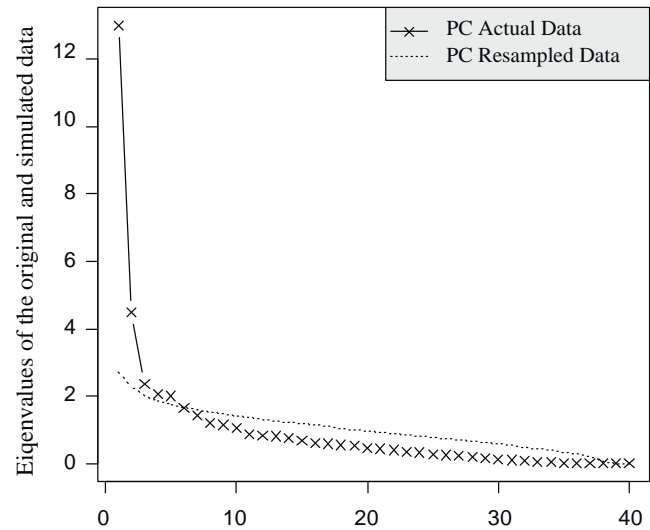


Figure 1. Parallel analysis of the tetrachoric matrix for the Alcohol Expectancy Questionnaire- Adolescents, Universidad Nacional de Mar del Plata, 2014, $n = 540$

1. *Relaxation and social assertiveness* subscale refers to beliefs that associate alcohol with facilitation of the expression of feelings, increased self-confidence and decreased shyness.
2. *Physical and social pleasure* subscale aims to beliefs that associate alcohol with increased well-being, pleasure sensations and beliefs that relate alcohol consumption with social events and celebration.
3. *Enhanced sexual experience* subscale makes reference to the belief that alcohol consumption improves sexual performance and increases sexual pleasure and romance.
4. *Increased power and aggression* subscale refers to beliefs that link alcohol consumption with increased aggressiveness and the possibility to start a fight or an argument.
5. *Global positive transformations* subscale aims to beliefs that associate alcohol consumption with positive prospects, greater coordination and the feeling of exercising social influence.

The subscale referring to negative effects on the behavior, the *physical and cognitive impairments* subscale, aims

to the belief that alcohol obstructs concentration, thought and action capacity.

Confirmatory factor analysis on the sample's second half yielded satisfying values for Model $\chi^2 = 1670.99$, $DoF = 623$, $CFI = .91$, $TLI = .90$, $RMSEA = 0.05$ [CI 95% 0.05-0.06], $SRMR = 0.07$. Standard coefficients for items in each dimension fluctuated between .17 and .77 (see Figure 2)

Reliability

Subscales internal consistency was: relaxation and social assertiveness (11 items, $KR-20 = .84$ [CI 95% .82-.84]), physical and social pleasure (four items, $KR-20 = .67$ [CI 95% .62-.71]), enhanced sexual experience (four items, $KR-20 = .71$ [CI 95% .67-.75]), increased power and aggression (three items, $KR-20 = .71$ [CI 95% .66-.75]), global positive transformations (seven items, $KR-20 = .70$ [CI 95% .66-.74]) and physical and cognitive impairments (eight items, $KR-20 = .75$ [CI 95% .72-.78]).

Item-level analysis

Table 2 shows item-level analyses of each subscale. Results were generally satisfactory, with adequate factorial loads. Three items (25, 31 and 37) presented a corrected point-biserial correlation lower than .30.

Dimensions (subscales) ratio

All the correlations between subscales (see Table 3) were significant at a $p < .01$ level. Nevertheless, many relations presented coefficients lower than .30. The Relaxation and social assertiveness subscale correlated with every other subscale.

Concurrent validity

Higher scores on every subscale predicted heavy episodic drinking. Participants scoring higher in the *Physical*

and *social pleasure* scale also had almost two times the chance of engaging in heavy episodic drinking (see Table 4). Expectancies that explained most of the variability on heavy episodic drinking behavior according to Nagelkerke's R^2 (not shown) were *Physical and social pleasure* (27%) and *Relaxation and social assertiveness* (15%); the remaining scales fluctuated between 2% and 5%.

DISCUSSION

This study analyzed the psychometric properties of the AEQ-A scale in university students located in Mar del Plata city. The questionnaire's local adaptation resulted in six factors measured by 37 items, unlike the original AEQ-A which comprises seven dimensions. The six subscales obtained by factor analysis showed adequate psychometric properties.

In terms of subscales characteristics, five of them referred to positive expectancies (*social assertiveness*, *physical and social pleasure*, *empowerment of sexual experience*, *increased power and aggression*, and *global positive transformations*) and only one of them gathered negative expectancies (*physical and cognitive impairments*).

One of the positive expectancies, *social assertiveness*, refers specifically to beliefs of improvement in social situations. Like most cultural adaptations made with adolescent or university population, especially in Latin America, beliefs that alcohol enhances social performance showed a strong consistency (Barroso, Mendes, & Barbosa, 2012; Mora-Ríos, Natera, Villatoro, & Villalvazo, 2000; Londoño Pérez, García Hernández, Valencia Lara, & Vinaccia Alpi, 2005; Pérez-Aranibar et al., 2005; Peuker, Fogaça, & Bizarro, 2006). Every adaptation found has at least one scale referring to the improvement of the performance in social

Table 1

Descriptive statistics subscales, Universidad Nacional de Mar del Plata, 2014, n = 540

Subscale	M (DE)	IC 95%	Explained Variance (%)
Relaxation and social assertiveness	4.46 (3.22)	4.26-4.65	14
Physical and social pleasure	2.28 (1.36)	2.19- 2.36	8
Increased power and aggression	.41 (8.22)	.36-.45	7
Enhanced sexual experience	.74 (1.11)	.67-.80	7
Global positive transformations	.62 (1.08)	.55-1.08	13
Physical and cognitive impairments	4.18 (2.34)	4.04-4.32	12

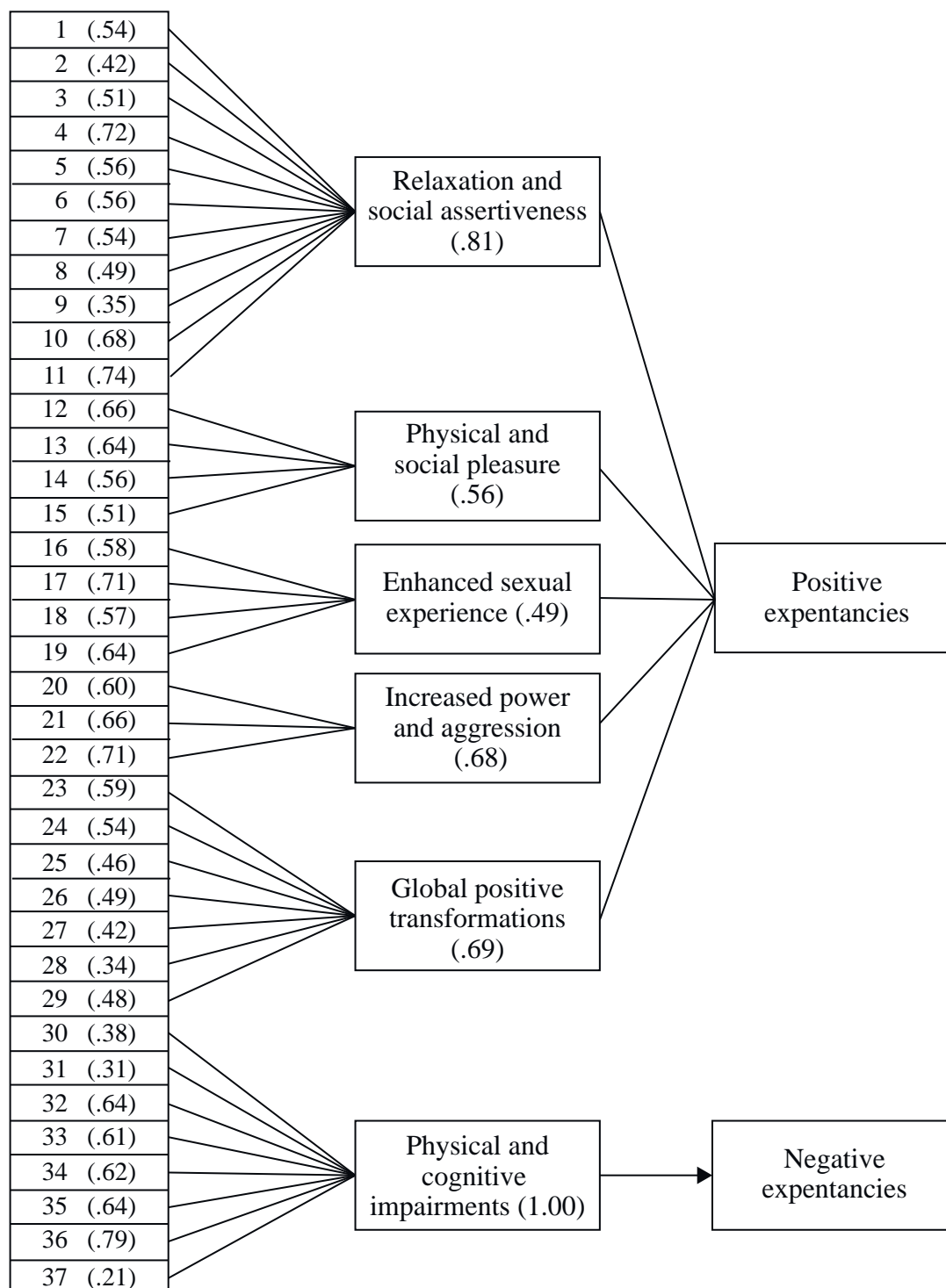


Figure 2. Standardized Coefficients Confirmatory Factor Analysis for Alcohol Expectancy Questionnaire-Adolescents, Universidad Nacional de Mar del Plata, 2014, n = 536

Table 2

Item level analysis of Alcohol Expectancy Questionnaire-Adolescents. Universidad Nacional de Mar del Plata, 2014, n = 540

Ítems	β^*	Correlación biserial puntual corregida**
<i>Relajación y asertividad social</i>		
1 Algunas bebidas me hacen sentir menos tímido.	.73	.50
2 Si me tomé un par de vasos. me resulta más fácil echar a alguien.	.58	.38
3 El alcohol hace que no me importen mis acciones.	.90	.56
4 Cuando estoy bebiendo es más fácil abrirme y expresar mis sentimientos.	.98	.62
5 Si me siento limitado de alguna manera. unos pocos tragos de alcohol me hacen sentir mejor.	.53	.48
6 El alcohol hace que me preocupe menos.	.60	.53
7 Es más probable que diga cosas vergonzosas después de haber estado tomando.	.55	.52
8 El alcohol hace que me preocupe menos por hacer las cosas bien.	.67	.49
9 El alcohol me hace más irresponsable.	.42	.41
10 Beber un poco me hace que sea más fácil hablar con alguien.	.68	.64
11 Si tomo un par de tragos es más fácil expresar mis sentimientos.	.68	.61
<i>Placer físico y social</i>		
12 Tomar un poco de alcohol tiene algo placentero. estimulante. para mí	.76	.50
13 El beber le agrega cierta calidez a los eventos sociales	.66	.46
14 Tomar un poco de alcohol es una buena manera para mí de celebrar ocasiones especiales	.82	.47
15 Me gusta beber porque me agrada juntarme con amigos que saben disfrutar	.74	.38
<i>Potenciación de la experiencia sexual</i>		
16 Soy un mejor amante después de unos tragos de alcohol	.83	.37
17 Después de unos pocos vasos respondo más sexualmente	.65	.58
18 Disfruto más de tener relaciones sexuales si he tomado algo de alcohol	.75	.50
19 Soy más romántico cuando bebo	.64	.50
<i>Incremento de la potencia y agresión</i>		
20 Beber aumenta mi agresividad	.78	.49
21 Es más probable que me vea envuelto en una discusión si he tomado algo de alcohol	.86	.58
22 Después de tomar un poco de alcohol me es más fácil empezar una pelea	.89	.53
<i>Cambios positivos globales</i>		
23 Me siento poderoso cuando bebo. como si yo pudiera influenciar a otros a hacer lo que yo quiero.	.80	.46
24 Beber hace que el futuro se vea más brillante.	.78	.43
25 El alcohol puede ser un anestésico para mí. como si pudiera suavizar el dolor.	.52	.29
26 Con frecuencia. me siento más sexy después de haber tomado unos tragos de alcohol.	.57	.35
27 El alcohol me parece mágico.	.74	.34
28 Me siento más coordinado después de beber.	.86	.36
29 El alcohol me hace más interesante.	.78	.46
<i>Impedimentos físicos y cognitivos</i>		
30 El alcohol disminuye la tensión muscular de mi cuerpo.	.64	.37
31 El alcohol hace que me duerma más fácilmente.	.56	.26
32 Soy más torpe después de beber un poco.	.66	.52
33 No puedo actuar tan rápidamente cuando he estado bebiendo.	.89	.57
34 El alcohol hace que sea difícil concentrarme.	.77	.52
35 No puedo pensar tan rápidamente después de beber.	.89	.56
36 El beber me hace torpe.	.77	.58
37 El alcohol me ayuda a dormir mejor.	.46	.23

* Factor loadings

** Calculated based on the subscales

Table 3

Correlations between factors from Alcohol Expectancy Questionnaire-Adolescents, Universidad Nacional de Mar del Plata, 2014, N = 1076

Subscale	Relaxation and social assertiveness	Physical and social pleasure	Increased power and aggression	Enhanced sexual experience	Global positive transformations	Physical and cognitive impairments
Relaxation and social assertiveness	1.000	-.554	-.393	.414	.641	.426
Physical and social pleasure	-.554	1.000	.374	-.240	-.332	-.211
Increased power and aggression	-.393	.374	1.000	-.210	-.345	-.132
Enhanced sexual experience	.414	-.240	-.210	1.000	.467	.352
Global positive transformations	.641	-.332	-.345	.467	1.000	.342
Physical and cognitive impairments	.426	-.211	-.132	.352	.342	1.000

Table 4

Association between Alcohol Expectancy and heavy episodic drinking behavior. Universidad Nacional de Mar del Plata, 2014, N = 1076

Subscale	<i>p</i>	OR	IC 95%
Relaxation and social assertiveness	.001	1.26	1.21-1.31
Physical and social pleasure	.001	2.33	2.06-2.64
Enhanced sexual experience	.001	1.43	1.28-1.61
Increased power and aggression	.001	1.47	1.26-1.70
Global positive transformations	.001	1.32	1.17-1.48
Physical and cognitive impairments	.008	1.07	1.02-1.13

Note. OR = OddRatio. CI = Confidence intervals.

The probability of having Binge drinking (1) about not have it (0) is displayed

interactions. This could be related to the fact that for most individuals, the beginning of their alcohol consumption happens during adolescence and in social situations given the fact that solitary alcohol intake is rare in young people (Barroso et al., 2012).

Compared with previous AEQ-A adaptations (Aas, 1993; Christiansen et al., 1982), this study did not find a subscale similar to the *relaxation or tension reduction* scale. This difference could be due to cultural drinking practices or to consumption in a wet culture (Room & Mäkelä, 2000) where alcohol intake is traditional and an important part of

social situations. This is probably reinforced by advertising aimed at young people, showing a positive social view of alcohol consumption.

In terms of the expectancies capacity to predict heavy episodic drinking, this model displayed an adequate adjustability and the beliefs about individual and social pleasant effects were predictors of heavy episodic drinking behavior. Like other AEQ versions (Rather, 1990), these beliefs would be related to this kind of consumption. These findings would reinforce the hypothesis that, in this group, consumption is associated with social situations.

Different studies have indicated the association between expectancies and alcohol consumption or related problems (Blume & Blume, 2014; Conde, Lichtenberger, & Peltzer, 2013). Thus, having psychometrically sound instruments to evaluate expectancies about alcohol becomes relevant to study the factors associated with consumption. Moreover, differences found in diverse contexts regarding the dimensions that predict heavy episodic drinking in this population provide an important source of information about beliefs associated with heavy episodic drinking in psychology students that would allow the development of prevention strategies.

This study has adapted the questionnaire to a population with certain sociodemographic characteristics, a specific educational level and a particular composition regarding gender, which could be a potential limitation. A large proportion of the people interviewed were females, and while in many cases literature hasn't shown differences in the expectancies of males and females (Fachini & Furtado, 2012), new findings in the Latin-American context indicate that there could be differences in some dimensions, such as *enhanced sexual experience* and *global positive transformations*, associated with higher consumption rates and greater consequences in males (Fachini & Furtado, 2014). This shows that it is necessary to conduct new investigations that allow the study of the possible differences between males and females as well as the questionnaire performance in other educational contexts.

Finally, new topics emerge from the present study, such as the relation between expectancies and consumption patterns and sociodemographic variables and the relation between negative expectancies and alcohol intake. These new topics could be addressed in future investigations.

REFERENCES

- Aas, H. (1993). Adaptation of the alcohol expectancy questionnaire (AEQ-A): A short version for use among 13-year-olds in Norway. *Scandinavian Journal of Psychology*, 34(2), 107-118. <http://dx.doi.org/10.1111/j.1467-9450.1993.tb01106.x>
- Barroso, T., Mendes, A., & Barbosa, A. (2012). Adaptação cultural e validação da versão portuguesa da escala de expectativas acerca do álcool: Versão adolescentes. *Revista de Enfermagem Referência*, (8), 17-27. <http://dx.doi.org/10.12707/RIII1242>
- Blume, A. W., & Blume, A. K. (2014). Alcohol outcome expectancies and consequences: Do people think themselves into and out of consequences? In C. Pracana (Ed.), *Psychology Applications & Developments*, 17- 23. Portugal: In Science Press.
- Brown, S. A., Christiansen, B. A., & Goldman, M. S. (1987). The Alcohol Expectancy Questionnaire: an instrument for the assessment of adolescent and adult alcohol expectancies. *Journal of studies on alcohol*, 48(5), 483-491. doi: <http://dx.doi.org/10.15288/jsa.1987.48.483>
- Brown, S. A., Goldman, M. S., Inn, A., & Anderson, L. R. (1980). Expectations of reinforcement from alcohol: Their domain and relation to drinking patterns. *Journal of Consulting and Clinical Psychology*, 48(4), 419-426.
- Brown, T. (2006). *Confirmatory factor analysis for applied research*. New York: Guildford.
- Christiansen, B. A., Goldman, M. S., & Inn, A. (1982). Development of alcohol-related expectancies in adolescents: Separating pharmacological from social-learning influences. *Journal of Consulting and Clinical Psychology*, 50(3), 336-344. <http://dx.doi.org/10.1037/0022-006X.50.3.336>
- Conde, K., Lichtenberger, A., & Peltzer, R. I. (2013). Validez de los cuestionarios de expectativas hacia el consumo de alcohol. *Investigaciones Andina*, 16(28), 881-897.
- Conde, K., Remaggi, M. L., & Cremonte, M. (2014). Alcohol y Amnesia en Universitarios de Argentina y España: Prevalencia y Predicción. *Health and Addictions/Salud y Drogas*, 14(1), 37-46.
- Fachini, A., & Furtado, E. F. (2012). Diferenças de gênero sobre expectativas do uso de álcool. *Rev Psiquiatr Clín (São Paulo)*, 39(2), 68-73.
- Fachini, A., & Furtado, E. F. (2014). Uso de álcool e expectativas do beber entre universitários: uma análise das diferenças entre os sexos. *Psicologia: Teoria e Pesquisa*, 29(4), 421-428.
- Fisher, L. B., Miles, I. W., Austin, S. B., Camargo Jr, C. A., & Colditz, G. A. (2007). Predictors of initiation of alcohol use among US adolescents: Findings from a prospective cohort study. *Archives of Pediatrics & Adolescent Medicine*, 161(10), 959. doi:10.1001/archpedi.161.10.959
- Gálvez-Buccollini, J. A., Paz-Soldán, V. A., Herrera, P. M., De-Lea, S., & Gilman, R. H. (2009). Gender differences in sex-related alcohol expectancies in young adults from a peri-urban area in Lima, Peru. *Revista Panamericana de Salud Pública*, 25(6), 499-505. <http://dx.doi.org/10.1590/S1020-49892009000600005>
- Herrán, O. F., & Ardila, M. F. (2009). Expectancies toward the intake of alcohol in young adults of Bucaramanga, Colombia, 2005. *Colombia Médica*, 40(3), 282-291.
- Jones, B. T., Corbin, W., & Fromme, K. (2001). A review of expectancy theory and alcohol consumption. *Addiction*, 96(1), 57-72. <http://dx.doi.org/10.1046/j.1360-0443.2001.961575.x>
- Karam, E., Kypri, K., & Salamoun, M. (2007). Alcohol use among college students: An international perspective. *Current Opinion in Psychiatry*, 20(3), 213-221. <http://dx.doi.org/10.1097/YCO.0b013e3280fa836c>

- Kline, R. B. (1996). Eight-month predictive validity and covariance structure of the alcohol expectancy questionnaire for adolescents (AEQ-A) for junior high school students. *Journal of Studies on Alcohol and Drugs*, 57(4), 396. <http://dx.doi.org/10.15288/jsa.1996.57.396>
- Kouimtsidis, C., Stahl, D., West, R., & Drummond, C. (2014). How important are positive and negative outcome expectancies in the treatment of addiction: a narrative review of the literature. *Drugs and Alcohol Today*, 14(3), 137-149. <http://dx.doi.org/10.1108/DAT-11-2013-0051>
- Leigh, B. C. (1989). In search of the seven dwarves: Issues of measurement and meaning in alcohol expectancy research. *Psychological Bulletin*, 105(3), 361. <http://dx.doi.org/10.1037/0033-2909.105.3.361>
- Leigh, B. C., & Stacy, A. W. (2004). Alcohol expectancies and drinking in different age groups. *Addiction*, 99(2), 215-227. <http://dx.doi.org/10.1111/j.1360-0443.2003.00641.x>
- Lichtenberger, A., Marconato, M., & Cremonte, M. (2011, agosto). *Expectativas hacia el consumo de alcohol y su relación con el consumo problemático y los trastornos por uso*. Trabajo presentado en la XIII Reunión Nacional y II Encuentro Internacional de la Asociación Argentina de Ciencias del Comportamiento, Entre Ríos.
- Londoño, C., García, W., Valencia, S. C., & Vinaccia, S. (2005). Expectativas frente al consumo de alcohol en jóvenes universitarios colombianos. *Anales de Psicología*, 21 (2), 259-267.
- Merino, C. (2015). *ICalfa: módulo Excel para estimar intervalos de confianza para alfa de Cronbach*. Programa no publicado.
- Miller, P. M., Smith, G. T., & Goldman, M. S. (1990). Emergence of alcohol expectancies in childhood: A possible critical period. *Journal of Studies on Alcohol and Drugs*, 51(4), 343. doi: <http://dx.doi.org/10.15288/jsa.1990.51.343>
- Mora-Ríos, J., Natera, G., Villatoro, J., & Villalvazo, R. (2000). Validez factorial del cuestionario de expectativas hacia el alcohol (AEQ) en estudiantes universitarios. *Psicología Conductual*, 8(2), 319-328.
- Norman, G. R., Streiner, D. L., & Tarrés, J. (1996). *Bioestadística*. Mosby/Doyma Libros Madrid.
- Observatorio Argentino de Drogas. (2006). *Estudio acerca del Consumo de sustancias psicoactivas en estudiantes universitarios del interior del país*. Buenos Aires: La Secretaría de Programación para la Prevención de la Drogadicción y la Lucha contra el Narcotráfico.
- Organización Mundial de la Salud (2010). *Estrategia mundial para reducir el uso nocivo de alcohol*. Ginebra, Suiza: Organización Mundial de la Salud.
- Perez-Aranibar, C. C., Van den Broucke, S., & Fontaine, J. (2005). Validation of the alcohol expectancy questionnaire (AEQ-A) for Peruvian university students. *Journal of Alcohol and Drug Education*, 49(3), 63.
- Peuker, A. C., Fogaça, J., & Bizarro, L. (2006). Expectativas e beber problemático entre universitários. *Psicologia: Teoria e Pesquisa*, 22(2), 193-200.
- Pilatti, A., Godoy, J. C., & Brussino, S. A. (2010). Construcción y valoración de las propiedades psicométricas del cuestionario de expectativas hacia el alcohol para niños de argentina (CEA-N). *Adicciones: Revista de Sociodroga alcohol*, 22(2), 113-124. doi: <http://dx.doi.org/10.20882/adicciones.200>
- Rather, B. C. (1990). Using the Alcohol Expectancy Questionnaire - Adolescent form to predict college drinking: long versus short forms. *Addictive Behaviors*, 15, 567-572. doi: 10.1016/0306-4603(90)90058-6
- Revelle, W. (2012). Procedures for psychological, psychometric, and personality research. *Acessoem*, 9.
- Room, R., & Mäkelä, K. (2000). Typologies of the cultural position of drinking. *Journal of Studies on Alcohol and Drugs*, 61(3), 475. doi: <http://dx.doi.org/10.15288/jsa.2000.61.475>
- Rosseel, Y. (2012). Lavaan: An R package for structural equation modeling. *Journal of Statistical Software*, 48(2), 1-36.
- White, A., & Hingson, R. (2014). The burden of alcohol use: Excessive alcohol consumption and related consequences among college students. *Alcohol research: current reviews*, 35(2), 201.